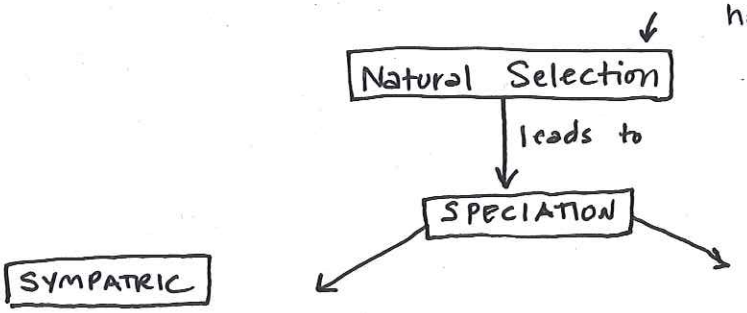
Biodiversity 2

4.1.2 Outline the mechanism of natural selection as a possible driving force for speciation

organisms that are more adapted to environment will survive better + have more babies – They'll be more "fit"



"Reproductive Isolation"
there are No physical boundaries.
This is due to:
- Behavioral (nocturnal, mating)
- Structural (sex organs)
- Germ Cell Mortality (sperm + egg die in wrong conditions)
- Hybrid Sterility – hybrids (offspring of 2 spp) can't have offspring.

* Two locations → orgs. adapt. diff. to diff. habitats.

Physical Barriers exist + split the gene pool. → eventually orgs. on the 2 sides can't mix.

ex. Mammals + Marsupials

ex. Chichlid fish in various lakes in Africa.

ex. Camel species on various continents.

4.1.3 State that isolation can lead to different species being produced that are unable to interbreed to yield fertile offspring

See above → Allopatric Speciation.

4.2.1 Identify factors that lead to loss of diversity → **Natural Causes** → Climate change, Volcanoes, asteroids

→ **Human Causes**

TOP 5 Main Causes: "HIPPO"

- **H**abitat Degredation OR Destruction
  - → deforestation, growing in desert, use water for irrigation/electricity.
  - → Habitat Fragmentation → dividing land into smaller pieces → orgs. can't migrate, ↑ edge effects
- **I**nvasive Species
  organisms end up in new places. New spp. outcompete native spp.
  ex. Cane Toads in Australia.
- **P**opulation
  as more population ↑ we use up more resources.
  We push orgs. out of space/resources.
- **P**ollution
  degrades habitat & poisons orgs.
- **O**verharvesting
  We use up so many, orgs. can't replace themselves.
  ex. hunting, fishing, cutting trees, overcollecting by botanists

- Modern Agriculture Methods
  - ↳ monocultures
  - ↳ cattle
  - ↳ GMOs
- Disease
  can kill all spp. of one population.

Climate Change → More Disease / New Emerging Diseases

- Climate Change
  - ↳ new temperatures + precipitation
    - ↙ new ranges for spp.
  - ↳ ↑ wild fires

→ **↑ Poaching**

4.2.4 Describe and explain the factors that may make species more or less prone to extinction

habitat ←→ food

↑ Specialization

More specialized habitat + needs → More affected if something changes.
ex. frog that lives in the spray of one waterfall.

Numbers

If Lots of a species then there is ↓ possibility of extinction.
(r-selected have lots)

Distribution

orgs found only in one place they can easily be wiped out.
- High distribution → hard to wipe out.

Behavior

If you can migrate than you can RUN AWAY.
But seasonal migrants + orgs. that migrate to specific place need BOTH habitats to be in good shape.

TROPHIC LEVEL

higher you up the ↑ poss. of extinction.
↳ Because you rely on everyone below.

Human Use

↳ they are yummy
↳ fur coats
↳ IVORY

Live in areas where humans want to be

Small variation in genes of the population

r vs. K selected

↳ r organisms → think "roaches" → ↓ poss. of extinction
high #s, low trophic level, lots of babies, low regeneration time, small, often generalists.

↳ K organisms → think "King Kong" → ↑ poss. of extinction
low #s, high trophic level, few babies, high regeneration time, big, often specialists.